Novel Plasma Proteins in Nepalese School-aged Children Are Associated with a Small Head Size at Birth

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Table S1. Characteristics of children at the time of blood draw for proteomics analysis (n=500).

	Value
Child characteristics	
Girl, %	50.2
Age, years	7.5 (0.4)
Ethnicity[a], Madheshi, %	68.2
Ever attended school, %	66.8
Child anthropometric measurements[b]	
Weight, kg	18.2 (2.2)
Height, cm	114.1 (5.8)
MUAC, cm	15.4 (1.1)
Body mass index (BMI), kg/m^2	14.0 (1.0)
Child undernutrition[b,c], %	
Stunted (height-for-age z-score < -2)	39.1
Underweight (weight-for-age z-score < -2)	48.5
Low BMI (BMI-for-age z-score < -2)	16.4
Caste, %	
Brahmin or Chhetri	14.0
Vaiysha	65.2
Shudra, Muslim or Buddhist	20.8
Household asset, %	
Land ownership	77.0
Bicycle	61.2
Cattle	69.6
Goat	65.6
Electricity	51.0
Television	30.4

Data are expressed as mean (standard deviation) or %. [a]Ethnicity was classified as either Madheshi (originating from the plains) or Pahadi (originating from the hills). [b]One outlier was excluded. [c]Anthropometry z-scores were calculated based on the WHO reference for children 5-19 years of age.

Table S2. Plasma proteins differentially abundant between children born with small head size and children born with normal head size (Head circumference-for-age z-scores < -2 or ≥ -2), q<0.05.

Protein name[a]	Gene symbol	n for HCZ ≥ -2[b]	n for HCZ < -2[b]	% Difference (95% CI)[c]	p-value[d]	q-value[e]	Accession[f]
14-3-3 protein zeta/delta	YWHAZ	294	78	-15.0 (-20.8, -8.9)	$4.03x10^{-6}$	0.0034	21735625
Transgelin-2	TAGLN2	327	87	-15.1 (-21.2, -8.5)	$1.69x10^{-5}$	0.0063	4507357
Actinin, alpha 1	ACTN1	370	92	-12.9 (-18.3, -7.1)	$2.27x10^{-5}$	0.0063	194097352
Talin 1	TLN1	393	97	-11.5 (-16.4, -6.3)	$2.94x10^{-5}$	0.0063	223029410
SH3 domain-binding glutamic acid-rich-like protein 3	SH3BGRL3	373	89	-15.3 (-21.9, -8.2)	$5.35x10^{-5}$	0.0082	13775198
Vasodilator-stimulated phosphoprotein	VASP	264	63	-15.5 (-22.2, -8.3)	$5.77x10^{-5}$	0.0082	4507869
Angiopoietin-like 6	ANGPTL6	148	47	16.5 (7.6, 26.0)	0.0001	0.0168	29893555
Tropomyosin alpha-4 chain	TPM4	303	82	-14.9 (-21.7, -7.4)	0.0002	0.0172	4507651
Vinculin	VCL	396	101	-8.5 (-12.8, -4.0)	0.0003	0.0256	4507877
Tropomyosin alpha-3 chain	TPM3	114	39	-20 (-29.2, -9.6)	0.0003	0.0258	114155146
Gelsolin	GSN	277	76	-8.4 (-12.8, -3.9)	0.0004	0.0293	38044288
Filamin-A	FLNA	396	101	-8.6 (-13.1, -3.9)	0.0004	0.0293	116063573
Calreticulin	CALR	265	72	-7.0 (-10.8, -3.1)	0.0005	0.0330	4757900
Moesin	MSN	339	88	-6.2 (-9.5, -2.7)	0.0005	0.0330	4505257
Adenylyl cyclase-associated protein 1	CAP1	139	40	-17.3 (-25.9, -7.7)	0.0007	0.0353	5453595
Calponin-2	CNN2	43	12	-24.8 (-36.5, -11)	0.0007	0.0353	41327730
Beta actin	ACTB	396	101	-8.7 (-13.4, -3.7)	0.0007	0.0353	4501885
Glyceraldehyde-3-phosphate dehydrogenase	GAPDH	390	100	-10.2 (-15.6, -4.4)	0.0007	0.0353	7669492
Phosphoglycerate kinase 1	PGK1	103	30	-17.9 (-26.9, -7.7)	0.0008	0.0360	4505763
Parvin, beta	PARVB	235	63	-18.3 (-27.4, -7.9)	0.0008	0.0360	20127528
Cofilin-1	CFL1	266	72	-11.5 (-17.6, -4.8)	0.0009	0.0369	5031635
Myosin light polypeptide 6	MYL6	243	57	-16.3 (-24.8, -6.9)	0.0010	0.0391	17986258
Profilin 1	PFN1	368	96	-10.5 (-16.2, -4.3)	0.0011	0.0391	4826898
Actin, alpha skeletal muscle	ACTA1	292	75	-11.7 (-18.1, -4.7)	0.0013	0.0481	4501881

Abbreviations: HCZ, head circumference z-scores. [a]Proteins are listed in increasing order of q. [b]Data were missing for HCZ (n=3). [c]Percent difference (95% confidence interval) in relative abundance of protein between children born with small compared to normal head circumference. [d]*P* value was calculated by testing a null hypothesis of no difference in protein relative abundance between two groups. [e]Multiple hypothesis testing was corrected using false discovery rate. [f]GenInfo sequence number as assigned to all nucleotide and protein sequences by the National Center for Biotechnology Information at the National Library of Medicine, NIH.